

ACU-RITE®

User's Manual



USB Recovery Drive

For use with:

MILLPWR^{G2} ID 1113777-xx

English (en)
10/2017

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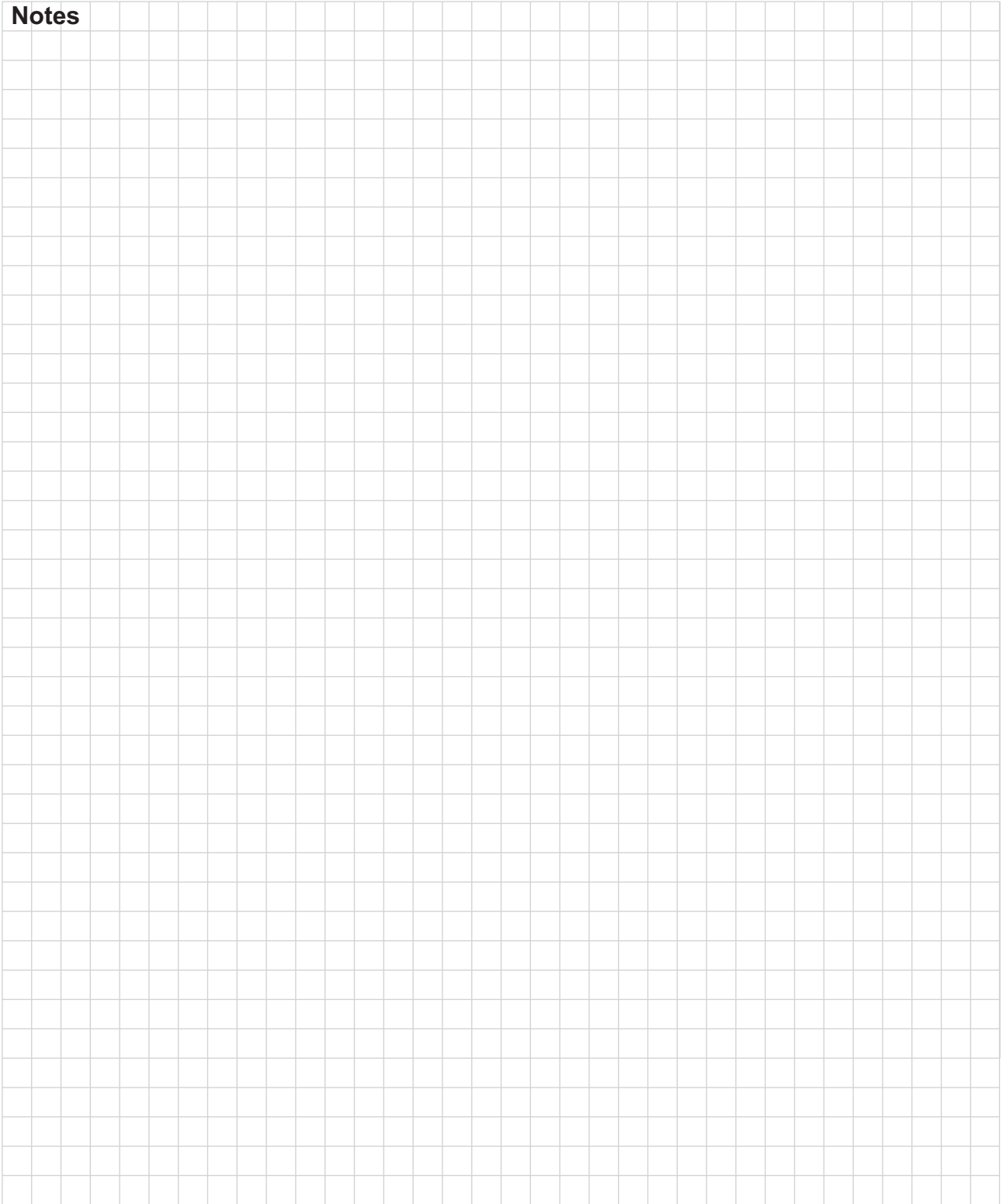
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Notes



1 - 1 Introduction

This document describes operation and use of the USB Recovery Drive 680480-04 for ACU-RITE® MILLPWR^{G2} ID 1113777-xx.

This utility is designed to backup system information or to recover from a damaged or corrupted internal drive.

Required hardware

A USB-type IBM compatible (PC) keyboard is required for all operations.

Software

The USB Recovery Drive is a product of HEIDENHAIN Corporation and is based on the open source Clonezilla project.

More information is available at www.clonezilla.org.

1 - 2 Operation



Damage to the MILLPWR^{G2} can occur if the USB Recovery Drive is used improperly. Use extreme caution and read and understand each operation thoroughly before executing.



Damage to other devices can occur. The Recovery Drive is designed to be used only on MILLPWR^{G2} consoles with ID 1113777-xx. Do not use on any other device including personal computers.

Navigating the menu

To navigate the USB Recovery Drive menu:

- ▶ Press the **UP** or **DOWN ARROW** keys on the USB keyboard to highlight a menu option
- ▶ Press the **Enter** key on the USB keyboard to select the highlighted option and enter its submenu or to run the highlighted option

Using the Recovery Drive



Damage to the contents of the internal drive or any connected external drive may occur if all external drives are not removed prior to using the USB Recovery Drive. Ensure that the USB Recovery Drive is the only USB storage device attached during its use.



While running a backup or recovery, multiple operations will take place and will require several minutes to complete. During these operations messages will scroll on the screen. This is normal and can be ignored.



If error messages are generated, make sure instructions are being followed correctly. If the error reoccurs, contact HEIDENHAIN Corporation for instructions.

To use the USB Recovery Drive:

- ▶ Shut down the machine
- ▶ Ensure that no other USB or external drives are attached to the machine
- ▶ Plug in a USB-type IBM compatible (PC) keyboard
- ▶ Insert the USB Recovery Drive into a USB port of the machine
- ▶ Follow the procedure for "Changing the boot order" on page 7

Changing the boot order



Damage to the internal drive or its contents can occur if the USB Recovery Drive is removed during the backup or recovery process. Wait to remove the USB Recovery Drive until the operation completes as indicated by the message stating "System halted".

Accessing the BIOS menu and changing the machine boot order is required to boot from the USB Recovery Drive and access the drive's menus. Follow the instructions for "Using the Recovery Drive" on page 6 prior to following the instructions below.

To change the machine boot order:

- ▶ Switch power on for the machine
- ▶ Press the **F2** key repeatedly as soon as boot information begins to display on the screen
The machine will enter the BIOS configuration menu
- ▶ Press the right arrow key to highlight "Boot" at the top menu bar

```

Main   Advanced   Security   Boot   Exit
Boot Priority Order
1.  ATA HDD2: SFCAB192H2BV4T0-I-DT-226-STD
2.  USB HDD:
3.  USB CD:
4.  USB FDD:
5.  ATAPI CD:
6.  ATA HDD0:
7.  ATA HDD1:
8.  ATA HDD3:
9.  ATA HDD4:
10. ATA HDD5:
11. OTHER HDD:
12. Internal Shell
13. PCI LAN: IBA GE Slot 00C8 v1395

```

- ▶ Press the **DOWN ARROW** key to highlight "USB HDD"

```

Main   Advanced   Security   Boot   Exit
Boot Priority Order
1.  ATA HDD2: SFCAB192H2BV4T0-I-DT-226-STD
2.  USB HDD:
3.  USB CD:
4.  USB FDD:
5.  ATAPI CD:
6.  ATA HDD0:
7.  ATA HDD1:
8.  ATA HDD3:
9.  ATA HDD4:
10. ATA HDD5:
11. OTHER HDD:
12. Internal Shell
13. PCI LAN: IBA GE Slot 00C8 v1395

```

- ▶ Press the “+” key as needed to move the selection to the top of the list
- ▶ Press **F10** to save and exit BIOS
- ▶ Press the **Enter** key to confirm exit



The machine will reboot and the USB Recovery Drive main menu will be displayed.

Main	Advanced	Security	Boot	Exit
Boot Priority Order				
1. USB HDD:				
2. ATA HDD2: SFCA8192H2BV4T0-I-DT-226-STD				
3. USB CD:				
4. USB FDD:				
5. ATAPI CD:				
6. ATA HDD0:				
7. ATA HDD1:				
8. ATA HDD3:				
9. ATA HDD4:				
10. ATA HDD5:				
11. OTHER HDD:				
12. Internal Shell				
13. PCI LAN: IBA GE S1ot 00C8 v1395				

Using the main menu

Upon startup after “Changing the boot order” on page 7 the USB Recovery Drive’s main menu will be displayed. For all available options, the system will perform a partially automated operation. User confirmation or input may be required. Follow the on-screen instructions for each operation as they are provided.

Each operation will take several minutes to complete and many messages will scroll on the screen. This is normal and the messages can be ignored.

Main menu options are:

1. Create Backup Image of internal drive
2. Restore Image onto internal drive
3. Pre-R5 System Drive Restructuring

Creating a backup image

This option will create a full disk clone image of the entire internal drive. The backup will be placed on the USB drive in the HC_BACKUPS partition, in the HC_Backup folder, with the filename you input during the operation. Several backups can be created and stored on the USB drive using unique filenames for each backup. The HC_BACKUPS partition of the USB drive, which contains the backup images, is not visible or accessible on a Windows PC.

To create a backup image of the entire internal drive:

- ▶ Select “1. Create Backup Image of internal drive”
- ▶ Type a filename for the backup
- ▶ Press **Enter** to continue the backup operation
“System halted” will show on the console when an operation is complete
- ▶ To conduct an additional backup or recovery operation, see “Conducting an additional operation” on page 9
- ▶ To return to normal operation, see “Returning to normal operation” on page 10

1. Create Backup Image of internal drive
2. Restore Image onto internal drive
3. Pre-R5 System Drive Restructuring

Restoring a backup image

This option will reset the entire internal drive to a previous machine state from which the backup image was made. The image that is restored to the internal drive can be selected from a list of available backup images present on the USB drive.

The images available on the USB drive include the factory default image that matches the software version which shipped in the CNC console and any backup images that were created. See "Creating a backup image" on page 8.

To restore an image onto the internal drive:

- ▶ Select "2. Restore Image onto internal drive"
- ▶ Select the backup image or factory default image to restore
- ▶ Press **Enter** to continue the backup operation
"System halted" will show on the console when an operation is complete
- ▶ To conduct an additional backup or recovery operation, see "Conducting an additional operation" on page 9
- ▶ To return to normal operation, see "Returning to normal operation" on page 10

Restructuring the internal drive



Restructuring the internal drive is required before updating a MILLPWR^{G2} to the Release 5 (R5) software version.

This option will restructure the internal CFast drive card partitions, while retaining all system and user data. An error message is generated if the drive has already been restructured.

To restructure the internal drive:

- ▶ Select "3. Pre-R5 System Drive Restructuring"
"System halted" will show on the console when an operation is complete
- ▶ To conduct an additional backup or recovery operation, see "Conducting an additional operation" on page 9
- ▶ To return to normal operation, see "Returning to normal operation" on page 10

Conducting an additional operation

To conduct an additional backup or recovery operation:

- ▶ Leave the USB Recovery Drive plugged into the machine's USB port
- ▶ Cycle the machine power switch (or press **Ctrl + Alt + Delete**) to reboot the machine
The machine will reboot and the USB Recovery Drive main menu will be displayed
- ▶ Select an option from the main menu and follow the corresponding instructions above

Returning to normal operation



Damage to the control may occur if **Find Home** is attempted prior to recommissioning and re-establishing normal operation. Be sure to recommission the control after a recovery operation. For further information, refer to the MILLPWR^{G2} Installation Manual ID 1034382-xx.

After a backup or recovery has completed and "System halted" is showing on the console:

- ▶ Remove the USB drive from the machine's USB port
- ▶ Cycle the machine power switch
- ▶ Press the **F2** key repeatedly as soon as boot information begins to display on the screen
- The machine will enter the BIOS configuration menu
- ▶ Press the **RIGHT ARROW** key to highlight "Boot" at the top menu bar

- ▶ Press the **DOWN ARROW** key to highlight "ATA HDD2"

- ▶ Press the "+" key as needed to move the selection to the top of the list

- ▶ Press **F10** to save and exit BIOS
- ▶ Press the **Enter** key to confirm exit
- The machine will automatically reboot
- On startup, the machine will request to Find Home and normal operation will be resumed

Main	Advanced	Security	Boot	Exit
Boot Priority Order				
1. USB HDD:				
2. ATA HDD2: SFCAB192H2BV4T0-I-DT-226-STD				
3. USB CD:				
4. USB FDD:				
5. ATAPI CD:				
6. ATA HDD0:				
7. ATA HDD1:				
8. ATA HDD3:				
9. ATA HDD4:				
10. ATA HDD5:				
11. OTHER HDD:				
12. Internal Shell				
13. PCI LAN: IBA GE Slot 00C8 v1395				

Main	Advanced	Security	Boot	Exit
Boot Priority Order				
1. USB HDD:				
2. ATA HDD2: SFCAB192H2BV4T0-I-DT-226-STD				
3. USB CD:				
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9. ATA HDD4:				
10. ATA HDD5:				
11. OTHER HDD:				
12. Internal Shell				
13. PCI LAN: IBA GE Slot 00C8 v1395				

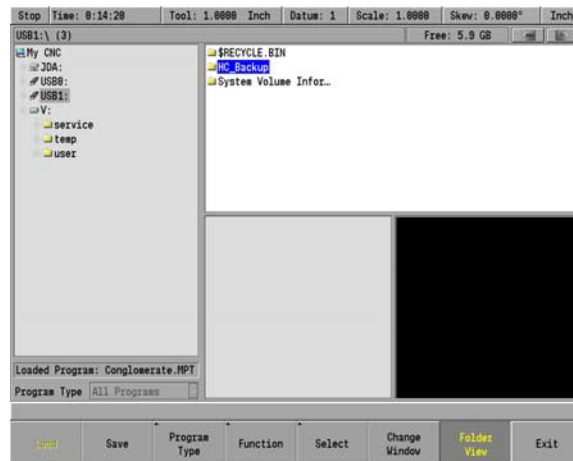
Main	Advanced	Security	Boot	Exit
Boot Priority Order				
1. ATA HDD2: SFCAB192H2BV4T0-I-DT-226-STD				
2. USB HDD:				
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9. ATA HDD4:				
10. ATA HDD5:				
11. OTHER HDD:				
12. Internal Shell				
13. PCI LAN: IBA GE Slot 00C8 v1395				

I - 3 Management

Accessing backup images

System backup images are not accessible from a Windows PC. The MILLPWR^{G2} is used to manage backup images on the recovery drive.

- ▶ Switch the machine power on and wait for the control to startup completely
- ▶ Insert the USB Recovery Drive into an available USB port
- ▶ Press the **DRO/PGM** key to switch to Programming mode, if necessary
- ▶ Use the **ARROW** keys and the **Change Window** soft key to navigate in the tree and contents windows
 - The system backup images are located in the "HC_Backup" folder on either the USB0: or the USB1: drives in the tree
- ▶ Use the **Function** soft key to conduct file operations as desired

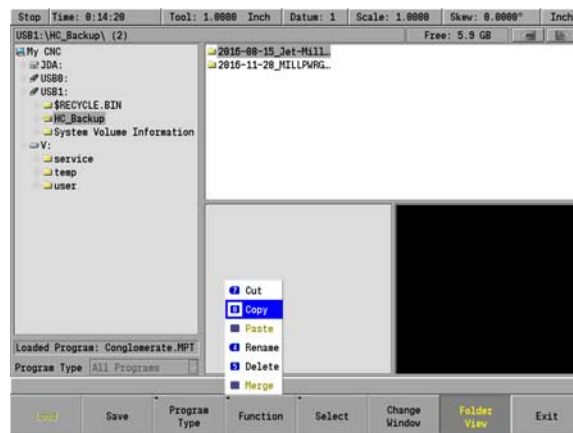


Copying backup images

Backup images can be saved off-line on another USB drive or PC for safe keeping.

- ▶ Insert another USB storage drive into the other available USB port of the CNC console
- ▶ Use the **Copy** function to copy the entire folder with the name of the desired backup from the USB Recovery Drive
- ▶ Use the **Paste** function to paste the image onto the other USB storage drive

Backup images can be stored on a PC by transferring them from the USB storage drive to the PC.



Deleting backup images

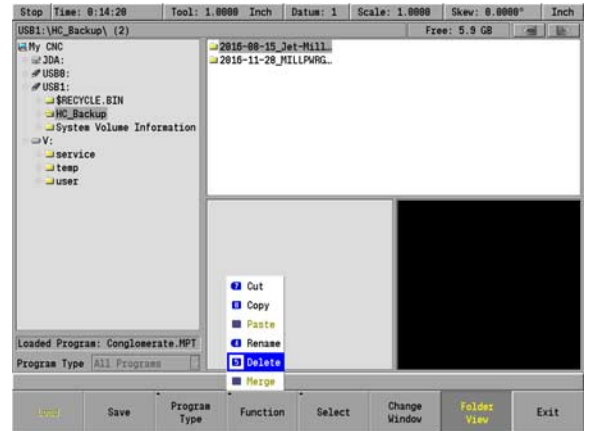


Do not delete the MILLPWR^{G2}_FACTORY-DEFAULT image.

This image allows you to return the system to the default state in which it shipped from the factory, if ever required in the future.

Backup images that are no longer required can be deleted to provide space for new backup images.

- Use the **Delete** function to delete the entire folder with the name of the unwanted backup



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HEIDENHAIN CORPORATION

333 East State Parkway

Schaumburg, IL 60173-5337 USA

☎ +1 (847) 490-1191

☎ **FAX** +1 (847) 490-3931

E-Mail: info@heidenhain.com

www.heidenhain.com